



SCEO Public Information Efforts Win Praise

Two SCEO public information projects received national recognition this summer as Best Energy Education Promotions. At their national meeting in July, State Energy Program managers reviewed dozens of energy education publications and other promotional items produced by State Energy Offices. The items voted "best" in each of 15 categories earned BEEP Awards.

SCEO's new television spot featuring E2 was voted Best Public Service Announcement Video. E2, the Energy Office's mascot, delivers animated energy conservation messages. Created by Fisher Communications, E2 joins the Department of Health and Environmental Control's Recycle Guys in a series of PSAs that encourage conservation of natural resources.



Public Information Coordinator Renee Daggerhart and new baby with BEEP Award for Best PSA

Renee Daggerhart, SCEO's Public Information Coordinator, worked with DHEC and Fisher Communications to develop the PSAs.

SCEO tied with the Iowa and Utah State Energy Offices for Best Web Site. SCEO's Web site provides a complete guide to energy program activities in South Carolina, access to Energy Office publications and reports, and regular updates on energy related legislation and policy. Links to other energy organizations, both state and national,



Kate Billing and Patricia Tangney with BEEP Award for Best Web Site

make the Web site a gateway to energy conservation and renewable resource information. SCEO's webmaster was Patricia Tangney, assisted by Kate Billing. The Web site is currently being revamped by Carmen Harper. (See article on Page 5)

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Clemson and DHEC Spearhead \$6 Million Statewide Tire Recycling Project

DHEC's office of Solid Waste Reduction and Recycling has awarded a \$6 million grant to the City of Clemson in conjunction with Clemson University for a research-outreach center that could literally pave the way toward eliminating the millions of worn-out tires clogging state landfills.

Through the project, recycled tires could find their way into everything from the state's highways and secondary roads, to exit-ramp embankments, retaining walls, running tracks, golf-course cart paths and erosion-resistant beach walls.

"What we learn will not only benefit South Carolina but may have national implications," said Serji Amirkhanian, project manager and director of Clemson's newly formed Asphalt-Rubber Technology Service, which is conducting the research. "This is a great opportunity for Clemson University, the City of Clemson and the state to promote the use of a material that has so much potential."

"By the time we're done we may just clean out tires from our landfills entirely," Amirkhanian said. The Clemson civil engineering professor is a nationally recognized leader in tire-recycling research.

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Notes From the Director

Mitch Perkins



It seems that every time you turn on the TV or read a newspaper, "E-Economy" is addressed in some fashion. E-Economy appears in every aspect of our life, including energy and the environment. This article comes in part from a commentary entitled "Strange Webfellows" from the March 2, 2000 issue of The Christian Science Monitor.

Surprisingly, analysts have concluded that it takes less physical matter to generate a dollar of economic output than it did 20 years ago, making the New E-Economy lighter than the old one.

This conclusion has prompted analysts to consider a second possibility, one that if proven true would force economists and environmentalists alike to discard their old assumptions about growth and energy use. Is it possible that the digital revolution may affect the ecosystems of the world in such a way that it will actually help the environment?

Although the idea remains unproven, the New E-Economy may continue to boom without causing environmental decline, unlike past industrial revolutions. However, critics point out that technology has failed to deliver the paperless office and the "energy-sipping economy" that were once predicted. Still, there are changes that deserve attention.

The overall effect of the New E-Economy is difficult to determine since such economic change tends to alter society in unexpected ways. Nevertheless, inefficiencies are being eliminated so quickly and in so many areas that the effects are truly remarkable. AT&T offers a prime example. By encouraging its sales force to work from home, the company estimates that it saved \$550 million by not having to build new office space between 1991 and 1998. AT&T estimates that the equivalent of 55,000 tons of carbon dioxide emissions were also saved by not having to build or heat or cool that space.

Twenty years ago, if a person wanted to send a message from Florida to Alaska they wrote a letter. Trees were cut down and processed to make the stationary and envelope, and the Post Office expended a lot of physical effort and fuel to deliver the letter. With widespread use of the fax machine, electricity replaced the role of the Post Office, and with the spread of e-mail, electricity eliminated the paper entirely. This process, called "dematerialization," is central to the New E-Economy.

The buying and selling of goods online is another key part of the New E-Economy. The average American household makes more than 500 trips to the store by car each year. If these same consumers do more of their shopping online, it follows that they will drive less, thereby reducing energy use and negative environmental effects. Researchers at Northwestern University's management school examined cost competition between Amazon.com and traditional booksellers, and found that the online retailer won hands down. While the traditional retailer had to heat and light stores, spending an average of 44 cents per \$100 of sales, Amazon.com sold far more books from a large warehouse and spent only 3 cents per \$100 worth of books sold.

Predicting the environmental results of the New E-Economy remains terribly complicated, experts caution, because the changes are so far-reaching and no one knows how consumers will react. Even straightforward questions bring murky answers.

What's Happening Around the State



The University of Charleston, formerly College of Charleston, has signed up as the newest Rebuild America/Rebuild South Carolina partner. The University has embarked on a major program of upgrading its chillers and boiler systems to become more energy efficient.

The City of Charleston has signed a Project Development Agreement with Johnson Controls, Inc., that could lead to an Energy Performance Contract in the future. Johnson Controls, Inc. will conduct an evaluation study of 11 facilities to identify energy conservation measures that can reduce the City's operating costs.

Williamsburg School District plans to undertake lighting upgrades under the South Carolina Energy Office's Schools Lighting Initiative. Rebuild South Carolina will provide an energy audit of one or two of the facilities identified as potential candidate buildings for the upgrade.

An Atlanta Regional Peer Exchange Forum for partners of Rebuild America was held in Orlando, FL, on September 18, 19 and 20, 2000. Rick Baldauf, South Carolina's Rebuild America Program Manager and Earl Copeland, Rebuild America Program Coordinator participated, with Copeland speaking during a session on Challenges and Solutions. The forum was designed to help partners throughout the region develop more effective partnerships by sharing information about where to find resources and how to get building performance projects done.

Two Rebuild America Partners, Charleston Southern University and Berkeley County School District, have requested energy audits for their facilities. Energy audits will be performed on the Norris Wingo Building and the Ashby Jones Building for Charleston Southern University. In Berkeley County School District, an energy audit will be performed on Berkeley Intermediate School.

Get in the Loop for America Recycles Day



South Carolinians spend over \$8 billion annually on energy costs, much of which is the direct result of wasteful energy practices. Through conservation and better energy efficiency, wasted money can be saved and put back into our state's economy.

Since South Carolina has no indigenous energy resources to speak of, we must make good use of the 98 percent we import. Recycling is a big first step.

Why should we recycle? Because recycling saves energy - it usually takes less energy to make recycled products. For example, it takes 95 percent less energy to produce recycled aluminum than new aluminum from bauxite ore. Want to bring recycling savings closer to home? Participate in **America Recycles Day** on November 15.

The 2000 **America Recycles Day** theme, "For the Future...Buy Recycled Today," is designed to take recycling to the next level in this country. By purchasing recycled-content products, we are building markets for finished products made from the recyclable steel, aluminum, glass, paper, and plastic materials we place at the curb or in drop-off facilities.

On November 15, join your neighbors in South Carolina's **America Recycles Day** events and help our nation continue to realize recycling's environmental and economic benefits. As an added incentive, complete the **America Recycles Day Challenge Card** below and mail it in by November 15 for a chance to win one of the following prizes:

- The American Green Dream House, an 1,850 square foot, three-bedroom home built primarily with recycled materials on the winner's lot;
- Airfare and a trip for 4 to Walt Disney World;
- \$1,000 from the S.C. Soft Drink Association;
- Four tickets to an Atlanta Braves baseball game;
- An EcoSpun jacket from Wellman, Inc.;
- And many more prizes for winners of all ages.

Thanks to you, recycling is working. Let's take it a step further and buy recycled!

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The project's impact could be significant:

* A single mile of pavement could use the equivalent of 3,000 to 20,000 shredded or ground tires, depending on the application.

* Up to 1 million shredded tires would be needed to build a two-mile embankment, such as those found on interstate on-ramps.

* Using pulverized "crumb rubber" as a cushioning sub-layer on roads would use the equivalent of 200,000 ground-up tires per two-mile stretch.

The five-year project will work with agencies and communities to identify recycling markets for waste tires and to provide education, training and consultation services. Through the service, grants will be made available to help fund projects throughout the state. The service could be involved with as many as four projects a year.

"We're glad to be part of this unique partnership," said Clemson Mayor Larry Abernathy. "One of City Council's goals is to look for partnerships with the university and nearby cities that can lead to quality-of-life improvements. This one promises to do that for the entire state."

I accept the challenge to buy recycled, recycle more or support a recycling event. Please enter me in the drawings to be held in Columbia, S.C. and Washington, D.C.



South Carolina
Soft Drink
Association, Inc.

**REGISTER TO WIN \$1000 Courtesy of the
South Carolina Soft Drink Association!**



Name: _____
Address: _____
City: _____ State: _____ Zip: _____
County: _____
Daytime Phone Number: _____

☐ **Please check here if you are under the age of 18.**

Notes: One entry per person. No purchase necessary. Your name and address will be kept confidential.

Send entries to: SC DHEC, Office of Solid Waste Reduction & Recycling, 2600 Bull Street, Columbia, SC 29201-1708

The Future of Nuclear Waste in South Carolina

South Carolina is one of six states that own a disposal site for low-level radioactive waste. When the U.S. Atomic Energy Commission decided in 1960 to issue licenses for disposal of such waste, it declared that burial sites must be located on land owned by either a state or the federal government.

The requirement for government ownership of radioactive waste burial sites makes sense. Even “low-level” radioactive waste will require monitoring for long periods of time. Private companies come and go, reorganize and merge, all in a matter of years. The requirement for government ownership was a prudent way to ensure resources will always be available to maintain the site, and to reduce the chances of forgetting that radioactive waste is buried there. Utah and Colorado have been authorized by the federal government to permit private companies to own low-level radioactive waste disposal sites, but the vast majority of states support the federal preference for government ownership.

Future generations of South Carolinians are protected from liability for the Barnwell site through an “extended care escrow fund,” which has grown to over \$96 million since the facility began operating in 1971. Most experts agree this amount is more than sufficient to conduct monitoring and maintenance of the site for the 100-year “institutional control period,” and address whatever problems may arise. A comparable fund in the State of Washington, for example, stands at \$24 million.

A number of steps have been taken to reduce the likelihood that the Barnwell site will experience environmental problems in the future after the site is closed. For example, longer-lived wastes must be processed or packaged into a stable form that maintains its structural integrity. In addition, the Barnwell site accepts no free-standing liquid waste which could provide a conduit for release of radionuclides into the ground water.

Since 1982, the Barnwell site has been allowed to accept only Class A, Class B, and Class C radioactive wastes. Waste with radioactivity exceeding Class C levels is the responsibility of the U.S. Department of Energy. Nor does the Barnwell site accept chemically “hazardous” waste or radioactive waste also classified as hazardous waste by the Environmental Protection Agency.

The Barnwell site is currently undergoing final closure of most of its older sections. Massive multi-layered caps designed to route surface water away from waste trenches have been placed over 70 acres of the site. The current plan is to permanently close and cap most of the Barnwell facility by the year 2008. At that time only a small remaining corner of the site will be used to accept small amounts of waste from the three states of the Atlantic Compact (Connecticut, New Jersey and South Carolina).

Once the entire Barnwell site is permanently closed, the South Carolina Budget and Control Board will assume responsibility for its custody and maintenance. The Department of Health and Environmental Control will continue to conduct environmental monitoring of the site and its surroundings.

Help Wanted

The South Carolina Energy Office is interested in contracting with individuals or firms with experience in conducting comprehensive energy surveys in support of the Rebuild America Program. For



additional information, contact Tom Hudkins at (803) 737-8030 or 1-800-851-8899 statewide.

Work in Progress on DSM Report

Energy Office staff is now working on compiling information for the latest demand-side management report. This will be the eighth annual report on demand-side activities implemented by the suppliers of electricity and natural gas throughout South Carolina, and should be ready for publication in early 2001. The publication of this report is required by the South Carolina Energy Conservation and Efficiency Act of 1992. Past years' reports can be found on our website, at www.state.sc.us/energy.

Ethanol Workshop

To educate key public officials and the general public about ethanol as a transportation fuel, the U.S. Department of Energy (DOE), Office of Fuels Development (OFD) through the Regional Biomass Energy Program (RBEP) and the South Carolina Energy Office held a one-day, state-level workshop on September 21 in Columbia entitled “Ethanol Production in South Carolina: Improving Rural Economy While Meeting Federal Air Regulations.”

A Planning Committee composed of officials from DOE, the Southern States Energy Board, SCEO, DHEC, DOT, the Department of Commerce, the SC Farm Bureau, SC Department of Agriculture, Forestry and Clemson organized a comprehensive agenda and an exciting group of speakers for the workshop. Discussion topics included air quality and transportation issues in South Carolina, the availability of feedstocks to produce ethanol in South Carolina, current ethanol production technologies, the experiences of other states in producing ethanol, and federal and state incentives that make ethanol production affordable.

The production and use of biofuels for transportation can provide several advantages and benefits to our state. Biofuels are domestically produced, providing energy security and reducing trade deficits and their associated economic drain. Engines utilizing biofuels produce fewer emissions (approximately 1/3 of all US greenhouse gas emissions come from the combustion of fossil-based transportation fuels). And from an economic standpoint, the local production and use of biofuels creates jobs, generates tax revenues, creates cash flow back into rural communities, and reduces the need for various government assistance programs.

New CMCCC Coordinator

Central Midlands Clean Cities Coalition has a new coordinator. Ashley Jacobs is now handling all day-to-day activities and is currently planning a stakeholders meeting for the fall. If you are interested in advancing the deployment of AFVs in Richland,



Lexington, Newberry or Fairfield Counties as a Clean Cities stakeholder, or just want to learn more about the program, contact Ashley at (803) 376-5390.



SC Energy Office Online

In September the Energy Office unveiled its updated Web site at <http://www.state.sc.us/energy>. The design of the new site makes it easier for the public to access information about the Energy Office including specific program information, energy resources and contact information.

“An important part of our job is making people understand the importance of saving energy. We have been able to do that using the Internet but the new Web site makes this easier and more effective,” said Energy Office Director Mitch Perkins.

The work of the Energy Office focuses on nine sectors and the new site divides information by these sectors. For example, information about Energy 2 Learn, the comprehensive kindergarten through twelfth-grade energy education program, is in the K-12 Education Sector. Schools and Agencies Verify Energy Dollars, or SC S.A.V.E.\$, will be located in the Public Sector. Other sectors include Commercial/Industrial, Utility, Residential, Transportation, Public Information, Sustainable/Renewables and the Radioactive Waste Disposal Program.

The Energy Office has been online since 1997. In August 2000 the site was accessed nearly 10,500 times. The most popular pages on the previous site were the 2000 Energy Action Plan and the Low-Level Radioactive Waste Disposal Program. For more information about the new site or its contents, contact Carmen Harper at charper@drd.state.sc.us or (800) 851-8899.

Upstate Ethanol Refueling Stations in the Works

The South Carolina Department of Health and Environmental Control recently directed \$440,000 of an \$11.2 million national fine levied against Willamette Industries by the Environmental Protection Agency into a Supplemental Environmental Project in the Catawba Council of Governments region to help clean up the air in Chester, York, Lancaster and Union counties.

As part of a national settlement against the paper company, Willamette must upgrade its Chester county plant and pay three agencies in South Carolina approximately \$1 million. Chester County and the state will share \$600,000 for general purposes, and DHEC has asked that Catawba COG use its share to work with the Catawba/Centralina Clean Fuels Coalition (CCCFC) to develop ethanol refueling stations in their four-county region. These stations, which will be put in place over the next several years, will be open to federal, state and local fleets; private fleets; and individual citizens.

Ethanol is an alcohol-based fuel that is blended with gasoline, generally at 85 percent ethanol and 15 percent gasoline. This blend is typically referred to as E-85, and vehicles equipped to operate on this fuel are called flex-fuel vehicles. Flex-fuel means that they can run on ethanol, gasoline, or any blend of the two. Many automobile manufacturers now make their vehicles flex-fuel standard (see list below). Fleet managers like to purchase E-85 vehicles because flex-fuel vehicles generally do not cost any more than a gasoline vehicle and count as an alternative fuel vehicle under the Energy Policy Act of 1992. This means fleets can satisfy their mandatory AFV purchase requirements under EPA92 without spending extra money. The problem is that ethanol is currently not available in South Carolina, so all those flex-fuel vehicles (close to 500 in the Charlotte/Rock Hill area alone) are currently running on gasoline.

With this ethanol project the CCCFC will change all that. In addition to helping fleets satisfy the intent of EPA92, the project will ultimately help air quality in the region. E-85 produces less greenhouse gas emissions than regular gasoline, and will help reduce the amount of smog-forming volatile organic compounds in the air. The latter is particularly important to the Rock Hill area because they are currently in non-attainment of federal air quality standards for ground level ozone, a situation that can seriously impede the growth of a region.

So if you live in Chester, Union, Lancaster or York County, be on the lookout for ethanol refueling stations in your area. If you have any questions about the project, please contact Wendy Bell of the CCCFC at (803) 327-9041.

School Lighting Initiative Update

Since the beginning of the South Carolina Energy Office lighting grant program, lighting audits have been completed in eleven school districts: Barnwell 19, Clarendon 2 and 3, Dillon 1, Dorchester 2, Greenwood 51, Hampton 2, Lexington 4, and Marion 2,3 and 4. The majority of these surveys have been conducted by lighting auditors under contract by the SCEO. However, in an effort to speed their projects along, some districts procured their own lighting audits.

The annual energy savings from the eleven lighting surveys already completed are approximately \$118,000.

Seven lighting grant applications have been received by the SCEO since the program's inception. The lighting initiative makes grants available to the state's 28 most financially-challenged districts - those that rank lowest in "wealth per pupil" or in "required local support" as defined by the State Department of Education. The maximum amount of any award is \$75,000 with the requirement that the district contribute a minimum share of 25 percent of the project cost. \$378,278 has been awarded to the seven districts that submitted applications. Three projects have been completed, one each in Hampton 2, Lexington 4, and Marion 3, with work in progress on one additional project in Dorchester 2.

Vehicles that can be Refueled with E-85:

All 1999 and 2000 Ford 3.0-L Ranger pickups	All 1998, 1999 and 2000 Plymouth 3.3-L minivans
All 1999 and 2000 Mazda 3.0-L B3000 pickups	Selected 1995-2000 Ford 3.0-L Taurus sedans
All 2000 General Motors 2.2-L S-10 pickups	All 2002 General Motors Suburban 5.3-L SUVs
All 2000 GMC 2.2-L Sonoma pickups	All 2002 General Motors Tahoe 5.3-L SUVs
All 1998, 1999 and 2000 Chrysler 3.3-L minivans	All 2002 GMC Yukon & Yukon XL 5.3-L SUVs
All 1998, 1999 and 2000 Dodge 3.3-L minivans	All 2003 Chevrolet Avalanche 5.3-L four door pickups

Energy Savers at USC

Saving electricity, water AND money...what a deal! The University of South Carolina's Department of University Housing is doing just that with their new laundry services. Under the direction of Dr. Gene Luna, Director of Student Development and University Housing, the new program is underway this fall.

The University Housing department has contracted with Web Laundry Services to provide state-of-the-art laundry services in USC's residence halls. Working with the School of the Environment and the South Carolina Sustainable Universities Initiative, the specifications for this new contract included energy and water conservation as a primary goal, along with world-class service to students.

Web Laundry Services has replaced all washing machines on campus with new front loading, water conserving washers. These Maytag machines use 10 gallons less water than the previous machines, have a larger capacity, require less detergent, and remove more moisture during the spin cycle, thereby reducing the energy used to dry the clothes.



Campus-wide, this conservation initiative will reduce water consumption in residence hall laundry rooms by more than 2 million gallons per year (nearly a 30 percent reduction). The reduced

water and energy consumption together is projected to save \$20,000 per year, a reduction of 24 percent from previous arrangements.

Dr. Gene Luna, Director of Student Development and University Housing, has championed this movement saying, "It makes perfect sense to conserve water and energy this way while also saving the University thousands of dollars. We hope to continue to make improvements in University Housing, moving toward sustainability."

The new laundry facilities also include a communications system called Laundrimate[®], a Web Laundry exclusive amenity which should save students time and energy. With Laundrimate[®], students can telephone the laundry room to see whether there are machines available, thus saving trips to the laundry room. The system will also call a student's room to let them know when their clothes are finished washing or drying.



USC has a newly formed, presidentially-appointed Environmental Advisory Committee (EAC) of which Dr. Luna has said, "Attending the monthly meetings of the EAC has really made me think about the way we do things in Housing, and changing these washing machines is a direct result of that." The EAC was formed in 1999 and is composed of 24 members including faculty,

staff and students from all over campus. These new laundry facilities are a perfect example of the type of change the EAC and the Sustainable Universities Initiative hope will begin to spread throughout campus and the community.

Opportunities to Learn and Get Involved

"Advancing the Choice"

Rock Hill, SC

September 28, 2000

The Catawba/Centralina Clean Fuels Coalition is hosting an alternative fuels forum at the Baxter Hood Center of York Technical College. Auto manufacturers, alternative fuel providers, and federal officials will be on hand to answer your questions about AFVs. For more information contact Wendy Bell at (803) 327-9041.



"Growing a Green Building"

Charleston, SC

October 11-13, 2000

The South Carolina Sustainable Universities Initiative, Clemson School of Architecture, MUSC College of Health Professions and USC School of Public Health are sponsoring this conference designed for anyone interested in planning a healthy "green" building for teaching and research. The event should be particularly valuable to faculty and students in architecture, campus facilities and construction project managers, and university administrators. Presenters will address planning, executing, trouble-shooting, and funding for campus construction and renovation that incorporates conservation in design and materials. The conference will be held at the Francis Marion Hotel in Charleston. If you are interested in attending this conference, visit <http://www.sc.edu/sustainableu>, click on the "Upcoming Conferences & Workshops" link, and fill out and return the registration form provided.

South Carolina Teachers Enjoy Valuable Summer Conferences

The South Carolina Energy Office and the S.C. Department of Health and Environmental Control's Office of Solid Waste Reduction and Recycling held the third annual Energy 2 Learn forum on July 13, 2000. This free, one-day event was open to K-12 classroom teachers and educators.

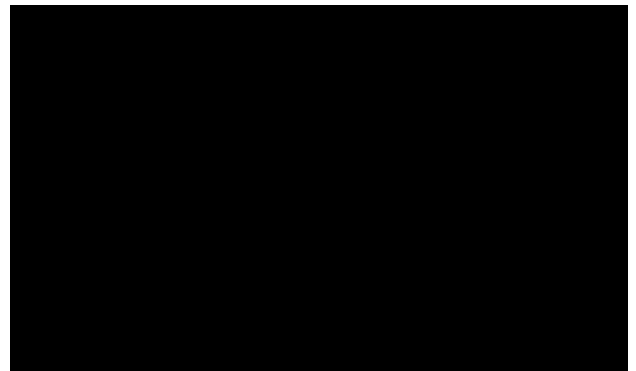
Teachers attended PEAP (Palmetto Energy Awards Program) and NEED (National Energy Education Development Project) sessions, received lessons on air and water quality, and went on a treasure hunt. The NEED session was taught in large part by a group of talented students, demonstrating NEED's central focus on kids as teachers. During the treasure hunt, educators visited information booths from the S.C. Energy Office, DHEC's Bureaus of Air and of Water, EdVenture, Champions of the Environment, and the S.C. Department of Natural Resources, among others.

All attendees were given curricula, lunch and assorted classroom supplies: an Energy T-shirt, bookmark and poster, a compact fluorescent lamp, pens, pencils and notepads, stressballs, a recycle bin and a tote bag. Many doorprizes were also given away including a recycled wagon, a NEED Science Kit valued at \$350, slideshows, water lesson kits, a \$50 Walmart gift certificate and a recycled computer courtesy of the U.S. Postal Service.

During lunch, the first Energy Educator of the Year award was presented to Kathleen Elam of Z.L. Madden Elementary School in Spartanburg, and Kevin Fisher of Fisher Communications showed attendees several new public service announcements featuring the Recycle Guys and Energy Office mascot "E2," short for Energy 2 Learn.

Later in the month, several South Carolina Teachers attended NEED's National Energy Conference for Educators held in Charleston, SC on July 22-26, 2000. Conference attendees from across the country participated in three full days of hands-on instruction and one day of tours, visiting Foster-Wheeler's waste-to-energy plant to see electricity being made from municipal solid waste and Dewees Island to see sustainable building in action.

Attendees learned many energy education games and chants, as well as how to incorporate energy education not only into science lessons, but also into math, language arts and music in innovative ways.



South Carolina's NEED Conference Attendees

Director Mitch Perkins

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State Budget and Control Board

Jim Hodges, Chairman
Governor

Grady L. Patterson
State Treasurer

James A. Lander
Comptroller General

John Drummond
Chairman, Senate Finance Committee

Robert W. Harrell, Jr.
Chairman, House Ways and Means
Committee

Rick Kelly
Executive Director

